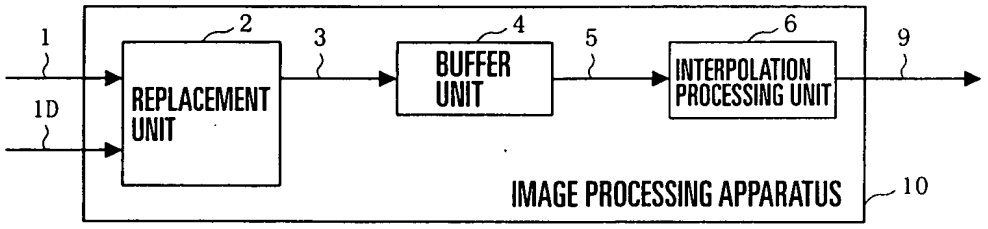


FIG. 1

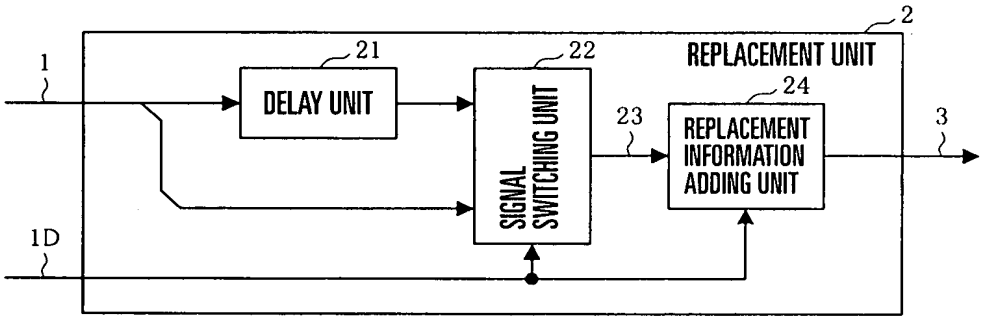
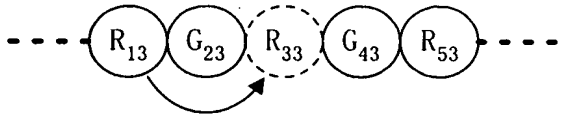


FIG. 2A



$R_{33}=R_{13}$

FIG. 2B

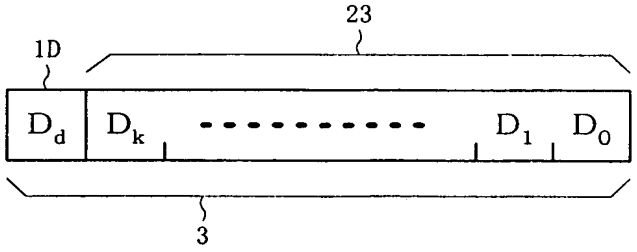


FIG. 2C

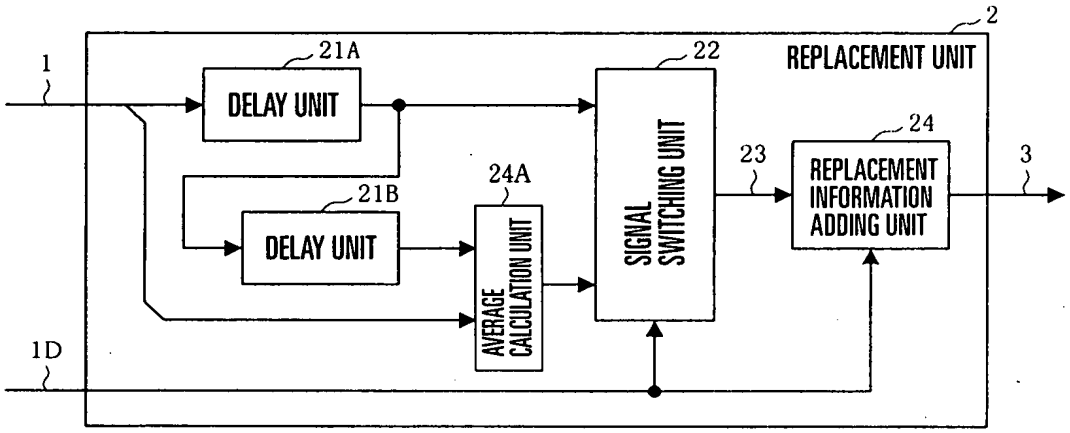
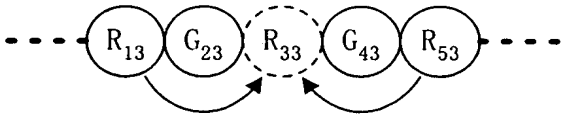


FIG. 3A



$$R_{33}=\frac{R_{13}+R_{53}}{2}$$

FIG. 3B

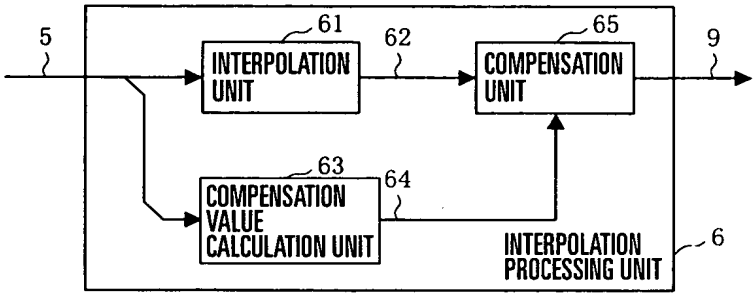


FIG. 4

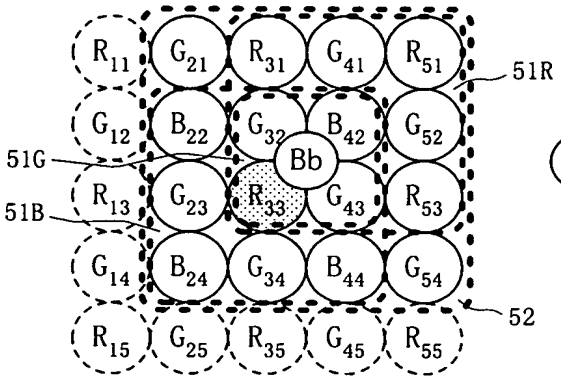


FIG. 5A

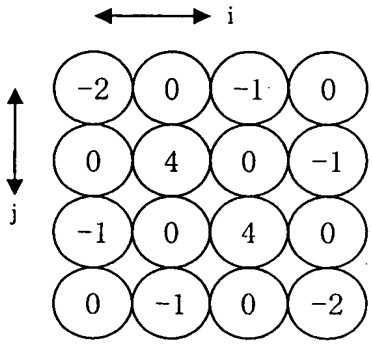


FIG. 5B

$$gBb = \frac{G_{32}+G_{43}}{2}$$

$$rBb = \frac{5\times R_{33}+R_{31}+R_{51}+R_{53}}{8}$$

$$bBb = \frac{5\times B_{42}+B_{22}+B_{24}+B_{44}}{8}$$

$$HFBb = \frac{4\times (G_{32}+G_{43}) - 2\times (G_{21}+G_{54}) - (G_{41}+G_{52}+G_{23}+G_{34})}{gf}$$

$$g'Bb = Ga+HFBb$$

$$r'Bb = Ra+HFBb$$

$$b'Bb = Ba+HFBb$$

FIG. 5C

FIG.6A

G_{32} AS DEFECTIVE PIXEL (THIS ALSO APPLIES TO G_{43})

$$gBb = G_{43}$$

$$(gBb = G_{32})$$

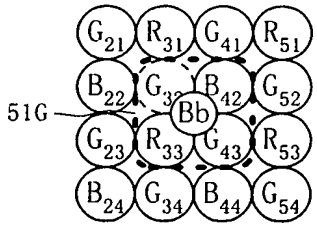


FIG.6B

R_{33} AS DEFECTIVE PIXEL (THIS ALSO APPLIES TO B_{42})

$$rBb = \frac{R_{33}+R_{31}+R_{51}+R_{53}}{4}$$

$$(bBb = \frac{B_{42}+B_{22}+B_{24}+B_{44}}{4})$$

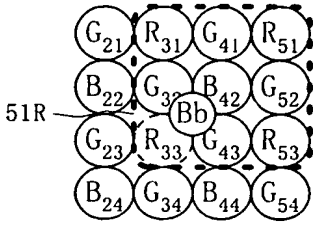


FIG.6C

ONE OR MORE PIXELS OF R_{31}, R_{51}, AND R_{53}, AS DEFECTIVE PIXELS (THIS ALSO APPLIES TO B_{22}, B_{24}, AND B_{44})

$$rBb = R_{33}$$

$$(bBb = B_{42})$$

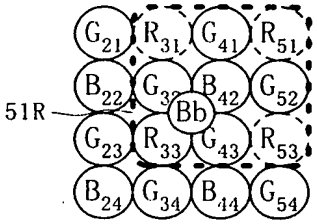
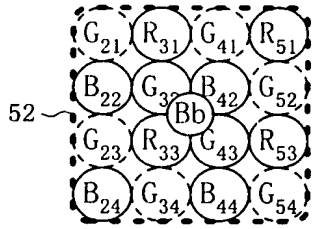


FIG.6D

ONE OR MORE PIXELS OF G_{21}, G_{23}, G_{32}, G_{34}, R_{41}, G_{43}, G_{52}, AND R_{54} AS DEFECTIVE PIXELS

$$HFBb = 0$$



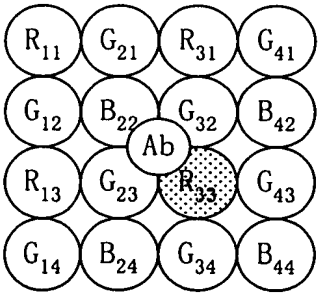


FIG.7A

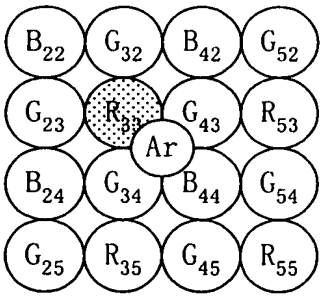


FIG.7B

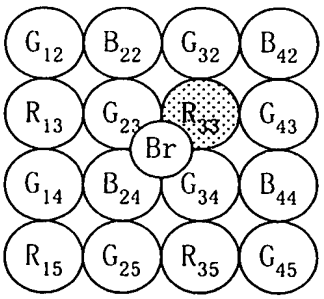


FIG.7C

FIG. 8

FIG. 9

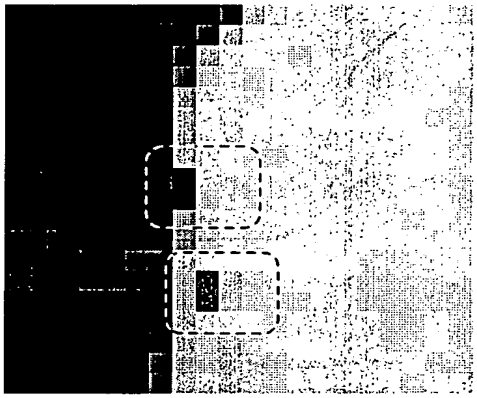


FIG. 10

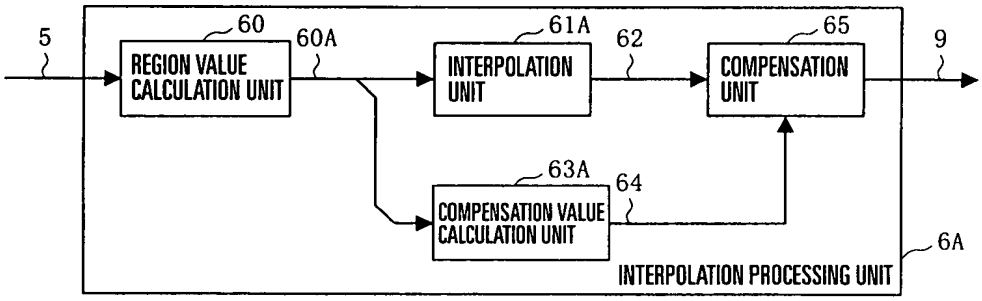


FIG. 11

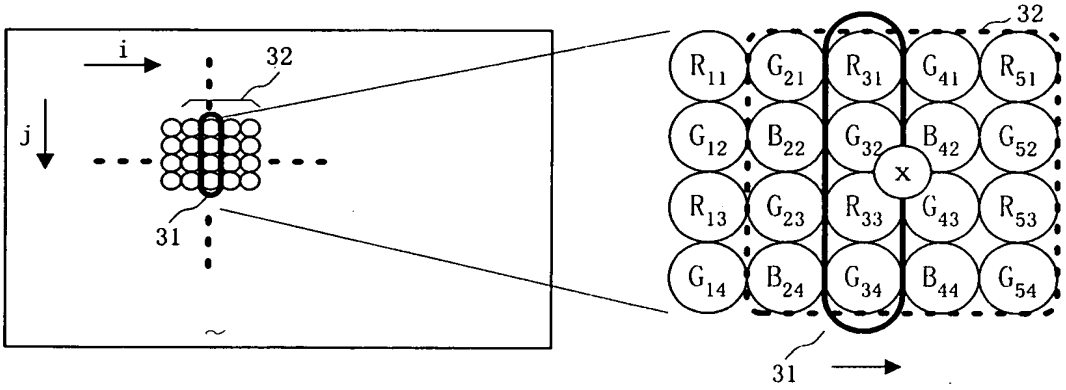


FIG. 12A

FIG. 12B

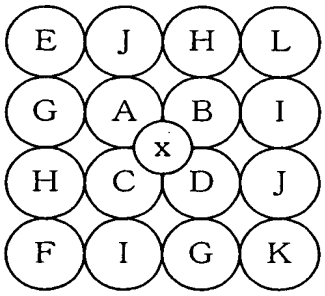


FIG. 12C

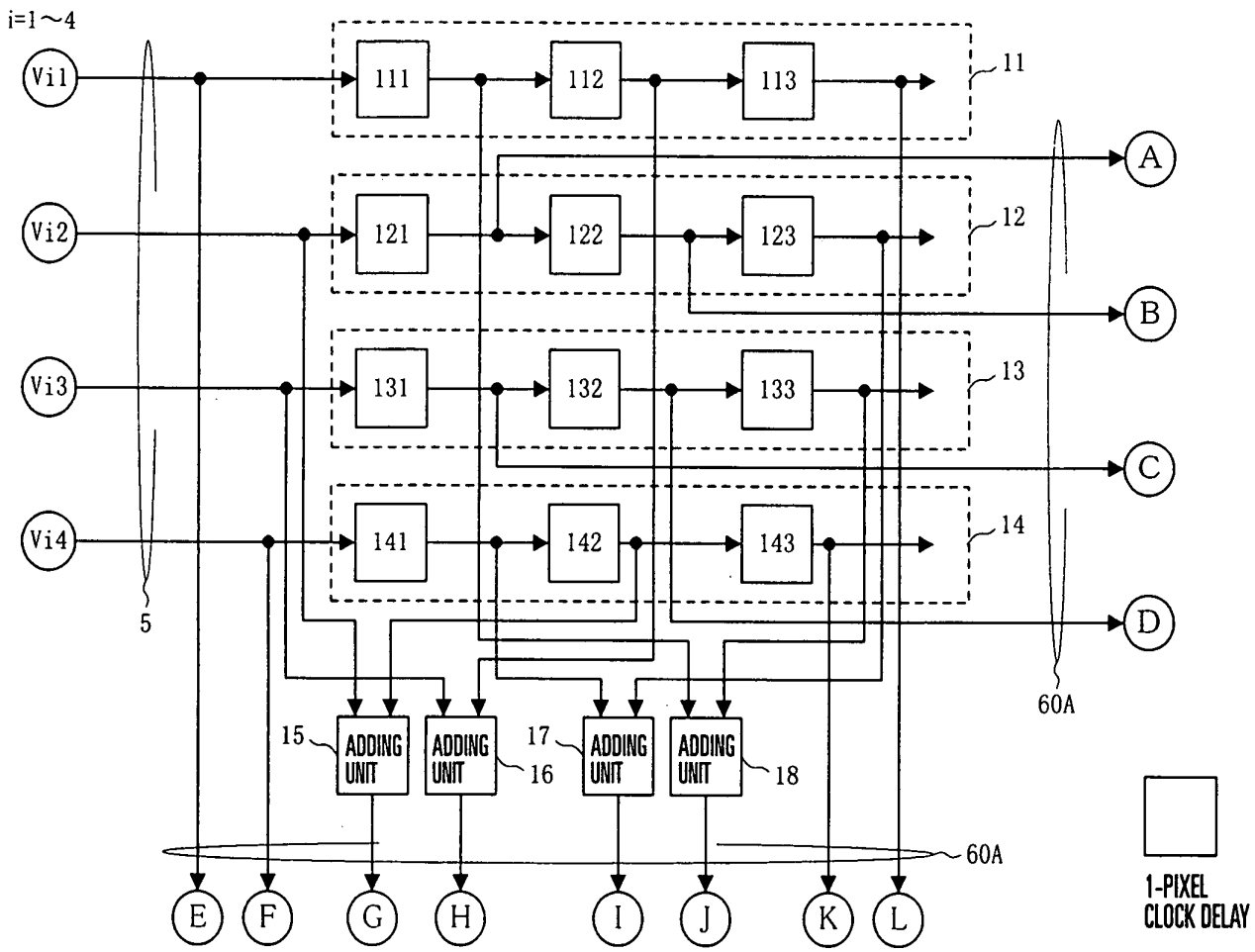

i=1~4
Vi1
Vi2
Vi3
Vi4
111
112
113
11
121
122
123
12
131
132
133
13
141
142
143
14
5
A
B
C
D
60A
15
ADDING UNIT
16
17
ADDING UNIT
18
60A
E
F
G
H
I
J
K
L
1-PIXEL CLOCK DELAY

FIG. 13

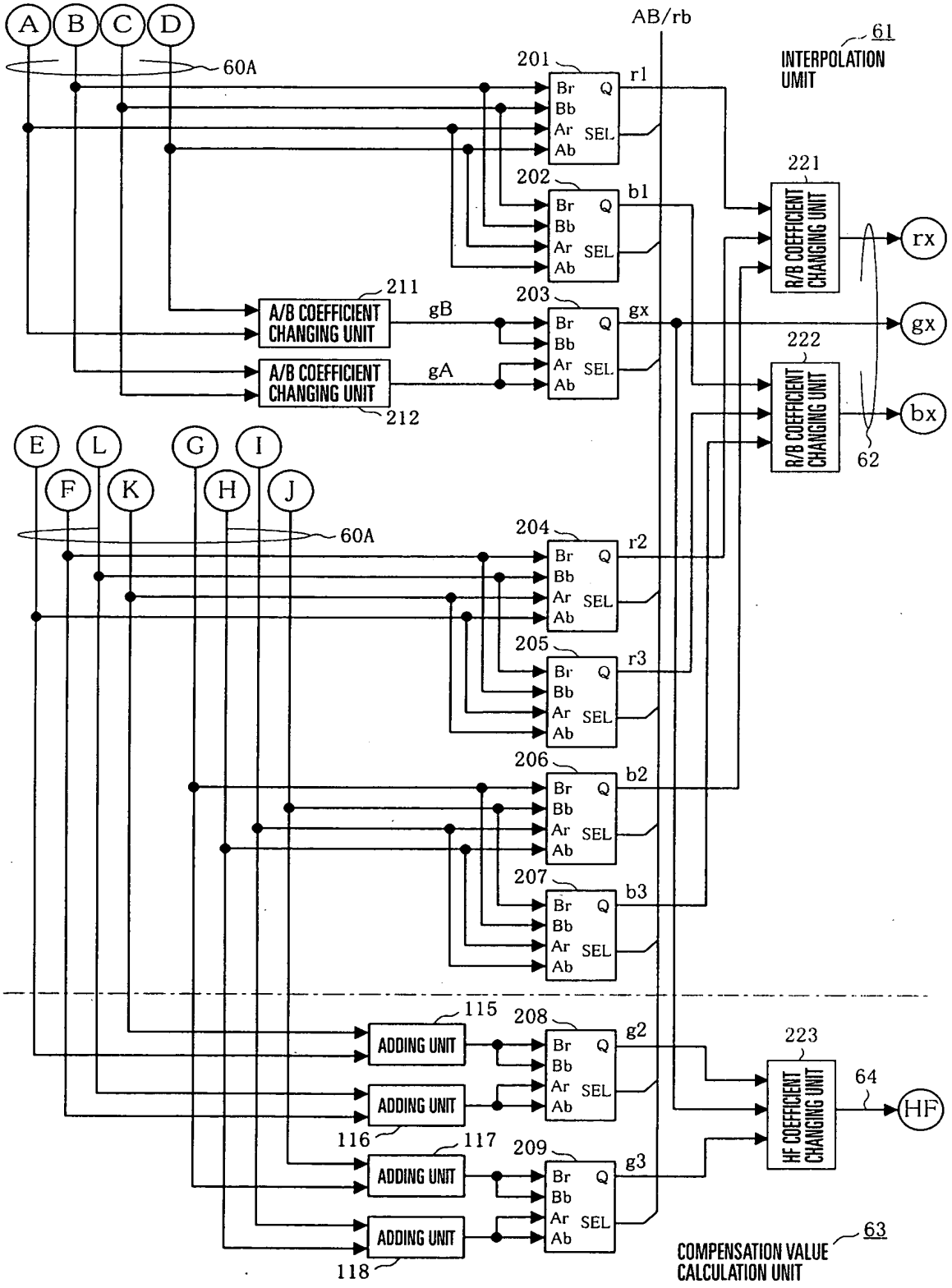

A
B
C
D
60A
AB/rb
61
INTERPOLATION UMIT
201
Br
Bb
Ar
Ab
SEL
Q
r1
202
b1
221
R/B COEFFICIENT CHANGING UNIT
rx
211
A/B COEFFICIENT CHANGING UNIT
gB
203
gx
222
A/B COEFFICIENT CHANGING UNIT
gA
212
62
E
L
G
I
F
K
H
J
204
r2
205
r3
206
b2
207
b3
115
ADDING UNIT
208
g2
223
64
HF
116
117
209
g3
118
63
COMPENSATION VALUE CALCULATION UNIT

FIG. 14

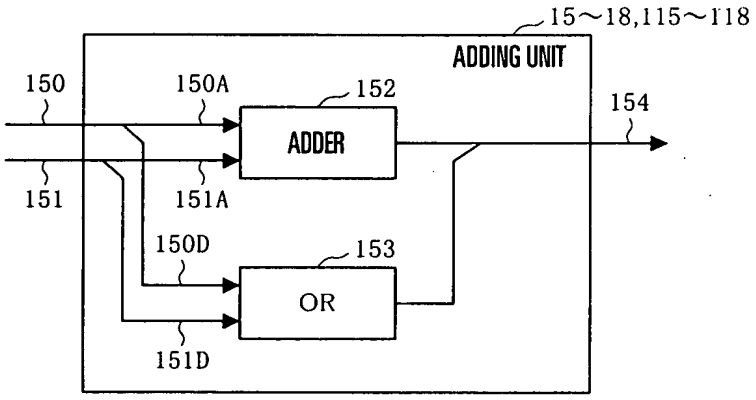

15~18,115~118
ADDING UNIT
150
150A
152
154
ADDER
151
151A
150D
153
OR
151D

FIG. 15

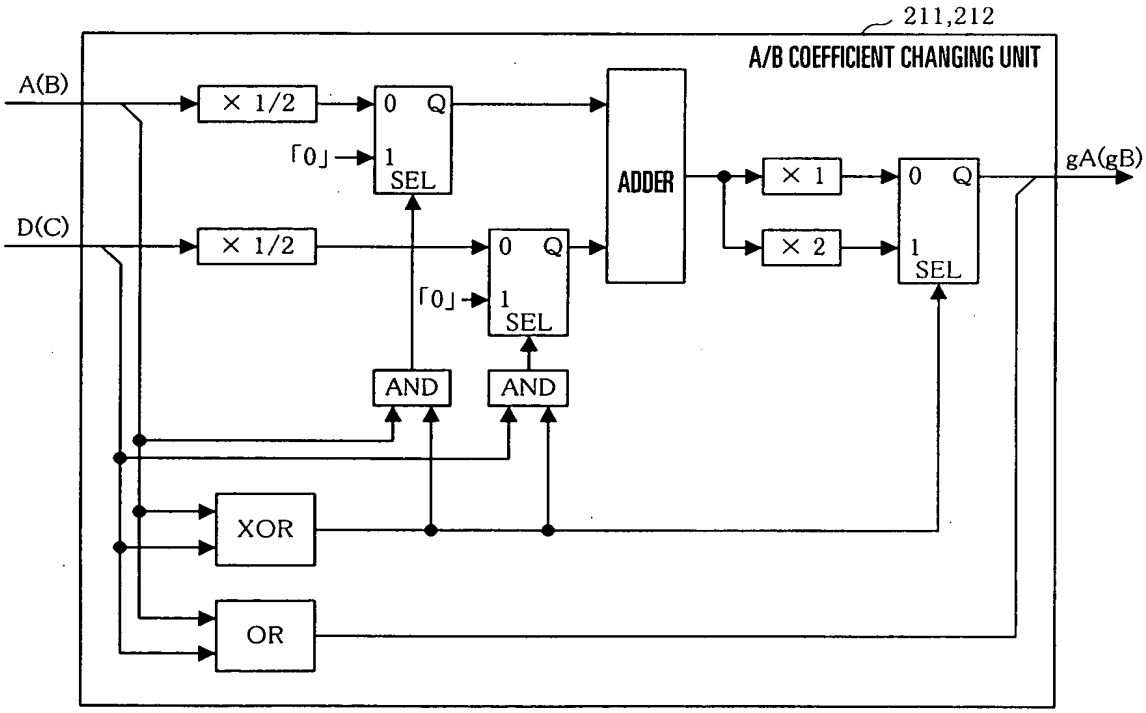

211,212
A/B COEFFICIENT CHANGING UNIT
A(B)
× 1/2
0 Q
「0」
1 SEL
ADDER
× 1
0 Q
gA(gB)
D(C)
× 1/2
× 2
1 SEL
「0」
1 SEL
AND
AND
XOR
OR

FIG. 16

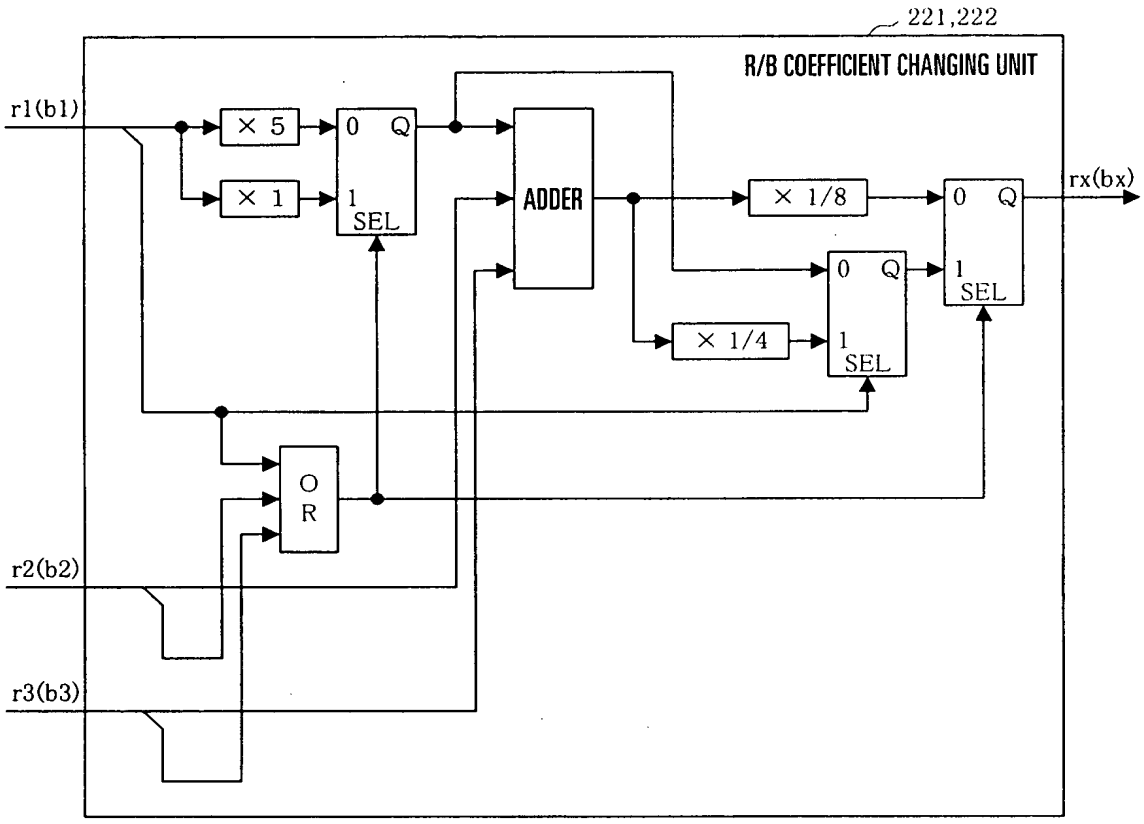

221,222
R/B COEFFICIENT CHANGING UNIT
r1(b1)
× 5
× 1
0 Q
1 SEL
ADDER
× 1/8
× 1/4
0 Q
1 SEL
0 Q
1 SEL
rx(bx)
O R
r2(b2)
r3(b3)

FIG. 17

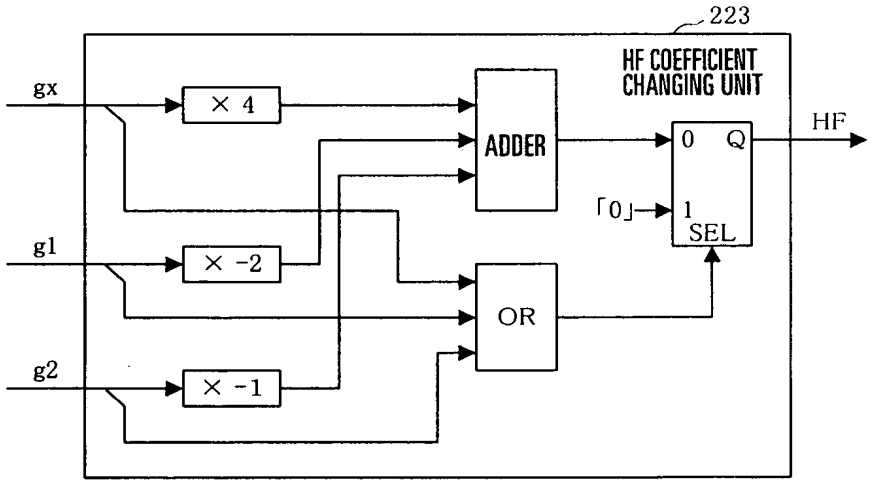

223
HF COEFFICIENT CHANGING UNIT
gx
× 4
ADDER
0 Q
「0」
1 SEL
HF
g1
× -2
OR
g2
× -1

FIG. 18

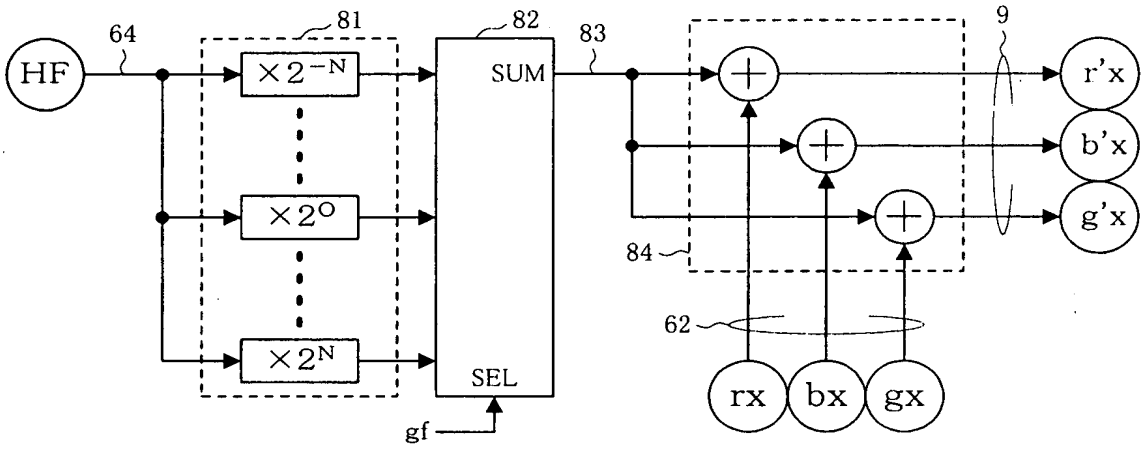

HF
64
81
82
83
9
×2^-N
×2^O
×2^N
SUM
SEL
gf
84
62
rx
bx
gx
r'x
b'x
g'x

FIG. 19

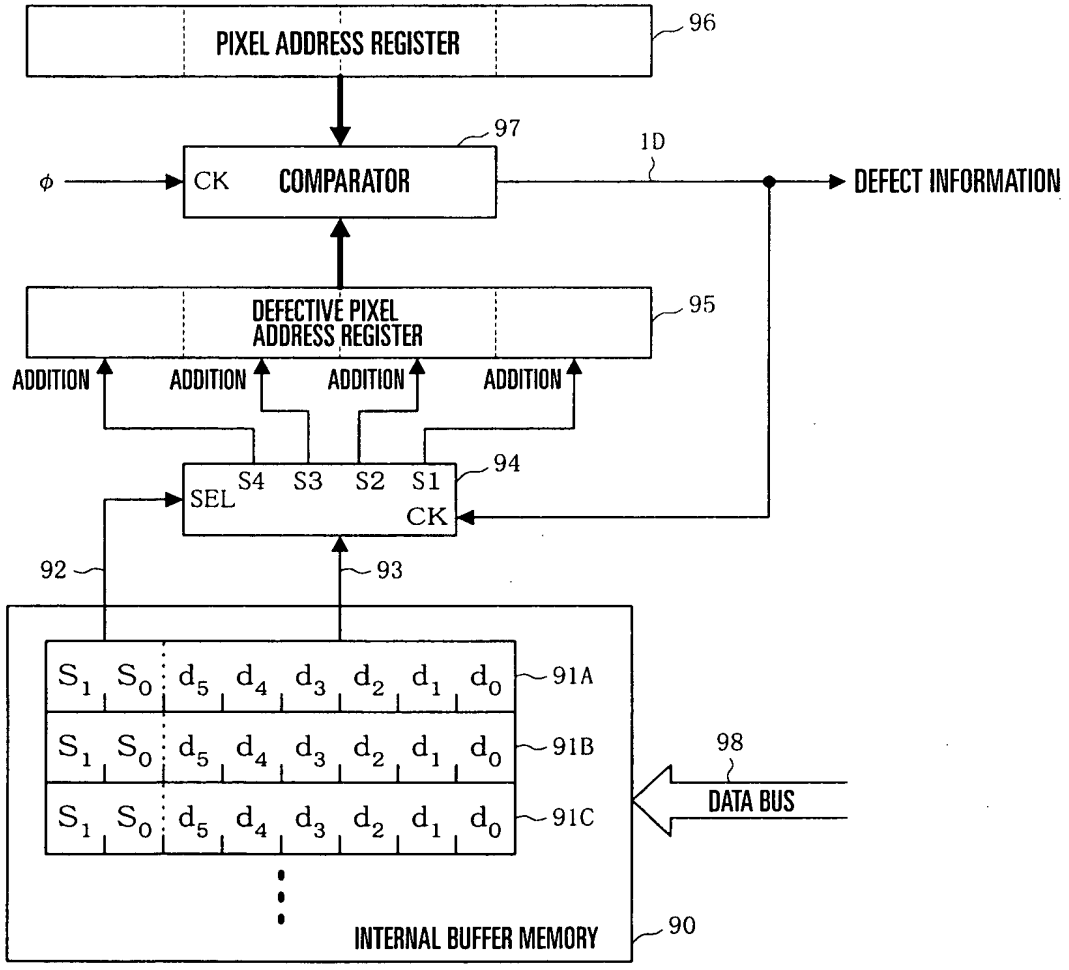

PIXEL ADDRESS REGISTER
96
97
1D
φ
CK
COMPARATOR
DEFECT INFORMATION
DEFECTIVE PIXEL ADDRESS REGISTER
95
ADDITION
ADDITION
ADDITION
ADDITION
SEL
S4
S3
S2
S1
CK
94
92
93
S1 S0 d5 d4 d3 d2 d1 d0
91A
91B
91C
98
DATA BUS
INTERNAL BUFFER MEMORY
90

FIG. 20

FIG. 21A

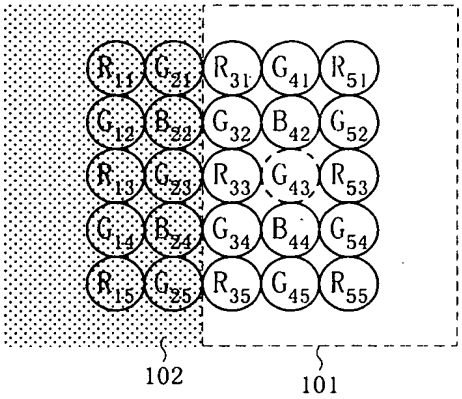


FIG. 21B

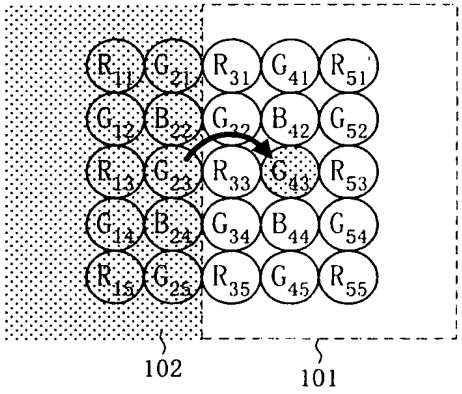


FIG. 21C